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Hepatitis C Screening in the Homeless Population of Philadelphia

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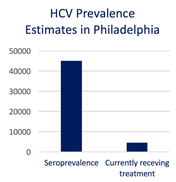
Background

Hepatitis C is a viral infectious disease that is a major cause of liver disease around the world. By the 1970s, it was recognized that many hepatitis cases were not due to the known hepatitis A or hepatitis B viruses. It was not until 1989 when the virus, then known as non-A, non-B hepatitis, was identified as a new distinct virus, hepatitis C. The virus has seven major genotypes, with genotype 1 causing about 75% of cases in the United States. By 1990, a screening test for the virus was developed, and within a year, the first treatment for the virus was approved.[1]

Research through the 1990s and into the early 2000s improved treatment options. Before 2011, the standard of care treatment for hepatitis C consisted of pegylated interferon and ribavirin, which successfully cured between 45% and 80% of individuals, depending on the specific genotype of HCV. In recent years, new treatments consisting of a combination of ledpiasivir, sofosbuvir, ribavirin, and pegylated interferon have improved the cure rate to up to 99% in some genotypes.[2] These drugs work without the many severe side effects of older classes of drugs, which had a relatively high risk of causing life threatening hemolytic anemia.[3] However, the cost of these new treatments can approach $100,000 for a twelve-week therapy, making the cost of treatment prohibitively expensive for many Americans. [4]

Epidemiology and Transmission in the Philadelphia Homeless Population

Hepatitis C is common, with approximately 200 million people livingwith chronic hepatitis C (3% of the world's population). Over recent decades, an increase in intravenous drug use has led to increased rates of exposure to the virus. In Philadelphia, rates are higher than the national average with seroprevalence estimates ranging from 30,000-45,000 (2-3%), with only 10-15% of those currently receiving treatment. An estimated 4,000 Philadelphians are diagnosed with HCV each year. When broken down by race, approximately 45% of cases are found in non-Hispanic African Americans, 30% in non-Hispanic Caucasians, and 15% in Hispanics.[5]



Hepatitis C Risk Factors

- Homelessness
- Intravenous Drug Use
- Previous Incarceration
- HIV co-infection

Hepatitis C prevalence is high among homeless individuals. Recent studies in the United States of the prevalence of HCV infections inthe homeless have shown an estimated prevalence ranging from 8% to 35%. A widely reported 2012 study of the homelesspopulation in Los Angeles showed that over 27% of homeless adults in downtown L.A. were infected with HCV. As expected, infection rates were higher amongst intravenous drug users, as well as those who were previously incarcerated.[6] While there have been no published studies on the prevalence of HCV in the homeless population of Philadelphia, it is likely that the rates should be similar to the seroprevalence in other major cities in the United States.

Implementation of a Hepatitis C Screening, Education, and Treatment Program at JeffHOPE

Screening

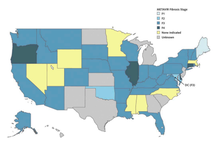
JeffHOPE clinics serve as student-run clinics for the underserved and homeless population of Philadelphia. Prior to 2010, the only test available for HCV was an enzyme immunoassay and recombinant immunoblot assay or HCV RNA testing, which were accurate but expensive and slow. In recent years, the FDA has approved the OraQuick Rapid HCV test, which, similar to the test currently used for HIV testing, tests for HCV antibodies. Also similar to the HIV test, the HCV instant test requires a small blood sample and the results are available within twenty minutes. If a patient tests positive, further testing is needed to see if the patient is currently infected with the virus. A rapid test for HCV would be greatly beneficial for populations in shelters, as they would be able to get their results quickly, and on the same day be provided with education and treatment options that may be available. Recent studies have shown a 97.8% sensitivity and 100% specificity of the rapid HCV test.[7]

Education

An important component of the JeffHOPE clinics is providing patients with health education. There may be many misconceptions about the transmission, symptoms, and treatment opportunities that should be addressed in a comprehensive testing program. The most important education to provide is how to prevent the spread and contraction of HCV, and there are numerous resources already available from the CDC and other health organizations that discuss the risk factors for transmission. Of particular concern in the populations seen at JeffHOPE clinics is sharing of any injection equipment used to inject drugs or any other substances. Information about syringe exchange programs in the area can also be provided to injection drug users, to help minimize their risk of infection. Patients should also be encouraged to come back for retesting, most likely every four to six months, particularly if they are at a high risk for infection, or have recently engaged in activity that they believe puts them at a higher risk of infection. Since hepatitis C may not cause any symptoms, patients also should be aware that even if they are feeling fine, they may still be infected.

Treatment

When discussing options for individuals who test positive for HCV, many factors must be considered, including ease of treatments, cost, insurance coverage, and effectiveness of treatment. The field of HCV treatment has changed rapidly in recent years, with many treatments now available that are more effective and have fewer side effects than options that were available only a few years ago. However, the cost of these newer treatment options may make it difficult for JeffHOPE patients to receive adequate treatments. Unfortunately, Medicaid in Pennsylvania may not reimburse for HCV medications, including sofosbuvir, unless the patient already has severe liver damage.[8] Many resources exist in Philadelphia for care and assistance with dealing with hepatitis C, including community health centers that may be able to provide treatment options for those who are uninsured or underinsured. The Philadelphia Department of Public Health runs a website, *Philly Hepatitis*, where they provide a list of options that are available.[9] All of these barriers to care must be considered when providing testing to patients, as just testing for the virus without providing treatment options that patients can utilize will not be effective.



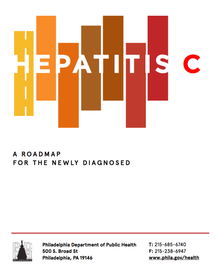
Restrictions for Medicaid Reimbursement of Sofosbuvir for the Treatment of Hepatitis C Virus Infection in the United States

Source: Barua, S., Greenwald, R., Grebely, J., Dore, G. J., Swan, T., & Taylor, L. E. (2015). Restrictions for Medicaid reimbursement of sofosbuvir for the treatment of hepatitis C virus infection in the United States. Annals of internal medicine, 163(3), 215-223.

Conclusions

Hepatitis C is extremely prevalent in the homeless population of Philadelphia, and the current lack of adequate screening options is a major public health issue that requires effort and initiative to solve. Recent breakthroughs in treatment options have made hepatitis C a curable disease, which lends even greater importance to this initiative. Implementing a HCV screening program at JeffHOPE clinics is a worthwhile endeavor that can help individuals find out if they are infected and receive guidance for treatment options. The infrastructure for such a program already exists at the clinics, due to the HIV screening program. The greatest foreseeable obstacle is the high cost of treatment, but there are organizations and options available to help with paying for the medications. Additionally, the Medicaid guidelines are being challenged in many states and access to the medications may be increased in the future.

Ultimately, our eventual goal should be to nearly solve the hepatitis C crisis in the homeless population, through testing, treatment, and education. With enough effort and resources, this can become a solvable public health issue.



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